

Date: Tuesday, 4/17/2007 11:07:56 AM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: MID TUBE ASSEMBLY
Job Number	: 31846		
Estimate Number	: 10469		
P.O. Number	: <i>N/A</i>	Part Number	: D3391023
This Issue	: 4/17/2007	S.O. No.	: <i>NA</i>
Prsht Rev.	: NC	Drawing Number	: D3391-REV F
First Issue	: <i>N/A</i>	Project Number	: N/A
Previous Run	: 31845	Drawing Revision	: F
		Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 5/20/2007
Checked & Approved By	: <i>[Signature]</i>	Qty:	1 Um: Each
Comment	: Est. A 05.10.20 New Issue KJ/EC		
	: Est. B 06.02.10 ECN773 dwg rev.D EC		
	: est C 07.03.20 rev F dwg EC		
	: est D 07.03.28 re-format EC		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D25001100	Skidtube Extrusion
-----	-----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
 SKIDTUBE EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D2500-1-100	Extrusion	<i>B324593 DP 7-4-19</i>

2.0	D3391021	Fwd Tube Assembly
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
 Fwd Tube Assembly
 Batch: *B31853*

3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
-----	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1
 1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open float bag holes 0.257" as per Dwg D3391

5-C'sink float bag holes as per Dwg D3391

6-Open remaining holes to Ø0.375" except for fwd saddle hole of detail "J"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 4/17/2007 11:07:56 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 31846

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

- 7-Remove .030" from Fwd indexing Ridge as per Dwg D3391
- 8-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391
- 9-Deburr
- 10-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,
- 11-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"
- 12-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.257" and c'sink (20 holes) as per Dwg D3391
- 13-Open .375" holes to .438" ***do not open fwd saddle holes***
- 14-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)
- 15- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021
- 16- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.
- 17- Locating from two fwd wearplate holes drillol remaining 6 wearplte holes in D3391-021 using DT8937
- 18- Open 2 fwd wearplate holes in D3391-023 to .250" dia.
- 19- Open 12 wearplate holes in D3391-021 to 0.257" dia.
- 20-Deburr and blow out all chips from inside tube

Handwritten notes and signatures on the right side of the page, including "7-5-3" and "7-5-24".

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Handwritten signature: J070525 @

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

Handwritten note: JB 7-5-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 4/17/2007 11:07:56 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 31846

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description:

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Int 07-05-29



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0

D33891

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEB

Pick:

Qty

Part Number

Description

Batch

1

D3389-1

Web

B 31891

A/R

Sikaflex-241/-291

h103561

Sikaflex expire date:

7-10-1

Start: *12:30*

Time:

7-5-29

Finish: *N/A*

Time:

N/A

JD 7-5-29

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

2-Bond web in place as per Dwg D3391 & QSI 015.
Adhere for 12 hours)

JD 7-5-29

9.0

QC5

INSPECT WORK TO CURRENT STEP



Int 06-28



(PTO)

Comment: INSPECT WORK TO CURRENT STEP

10.0

POWDER COATING

POWDER COATING



m 104 144



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3.

BR/m 07-07-19

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

C- 7/7/24

12.0

NAS1330C3KB116

Insert



Comment: Qty.: 20.0000 Each(s)/Unit Total: 20.0000 Each(s)

Insert

Pick:

Qty

Part Number

Description

Batch

20

NAS1330C3KB116

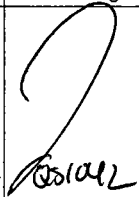
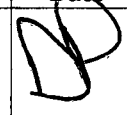
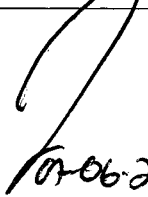
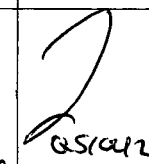
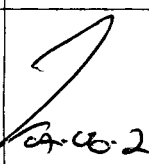
Insert

M100712

21 07 07 24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod-Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: LD Date: 07/07/13
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-06-25	8.0	web holes at the fuel ground handling location is slightly off, causing the pins to rub on the webs.		remove, roundly, 0.020" at the fuel glw location, Deburr & touch-up with Krodine per QSI 005	 7-6-26	 7-6-26	 05/07/12	 07-06-25

initial all entries

Date: Tuesday, 4/17/2007 11:07:56 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 31846

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description:

13.0

NAS1330C3KB166

INSERT



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)

RivnuT

Pick:

Qty Part Number

Description

Batch

10

NAS1330C3KB166

Insert

M102849 *MS*

14.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install inserts as per dwg D3391

touch-up holes in D3391-021 with alodine

MS

07-07-24

(1)

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect each insert using DT8821

ENO7/7/24 (46)

16.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

PPP B33525

07/7/30

17.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

07/7/30

Job Completion



U 07-07-30

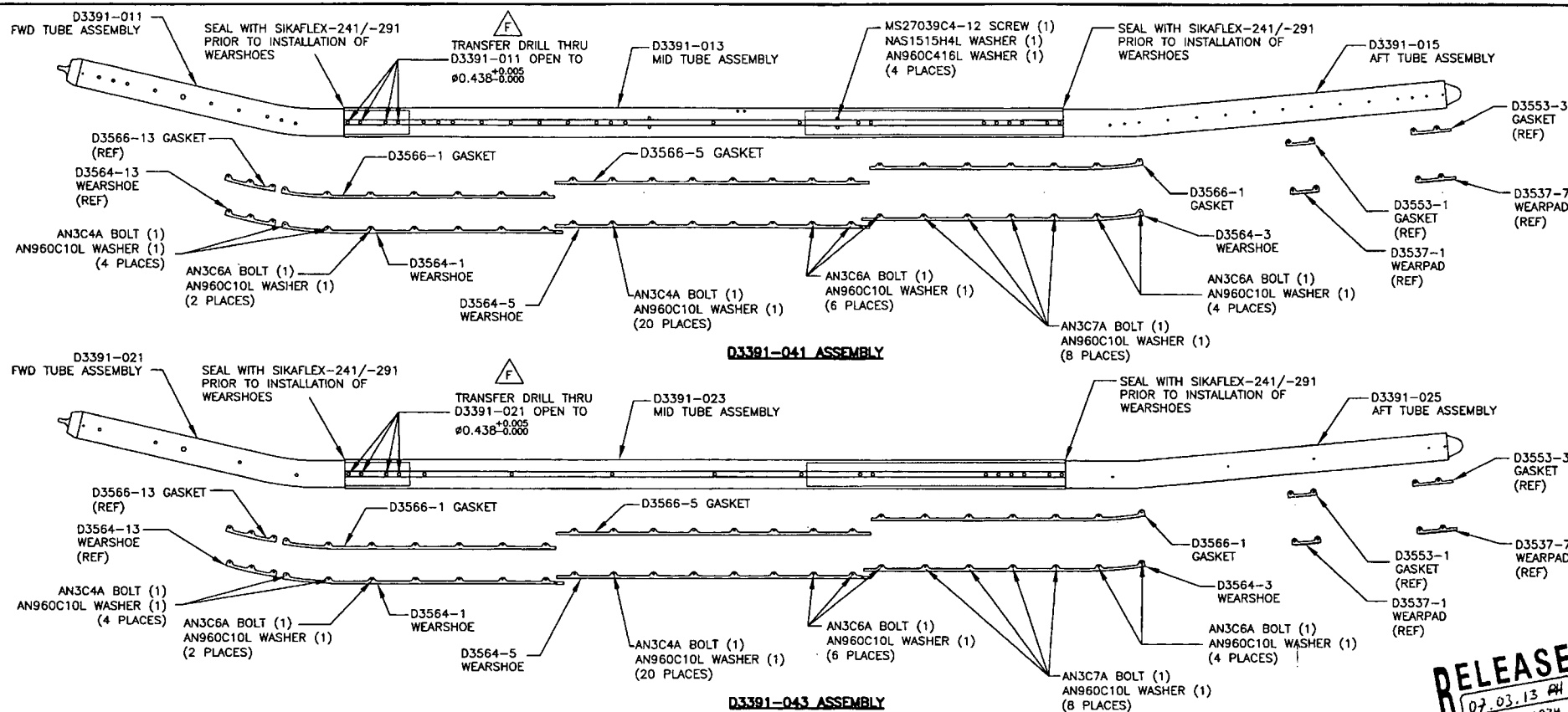
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
07.03.13 AH
per E-N #934

D3391-041/-043 FLOAT SKITUBE ASSEMBLY PARTS LIST

QTY -041	QTY -043	PART NUMBER	DESCRIPTION
X	X	D3391-041	FLOAT SKITUBE ASSEMBLY
		D3391-043	FLOAT SKITUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
1	1	D3391-021	FWD TUBE ASSEMBLY
1	1	D3391-023	MID TUBE ASSEMBLY
1	1	D3391-025	AFT TUBE ASSEMBLY
1	1	D3564-1	WEARSHOE
1	1	D3564-3	WEARSHOE
1	1	D3564-5	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	AN960C10L	WASHER
4	4	MS27039C4-12	SCREW
4	4	NAS1515H4L	WASHER
4	4	AN960C416L	WASHER

GENERAL NOTES

- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 'E' SIZE HOLES (#0.250-#0.257) FOR WEARSHOE INSERTS. C'SINK #0.391/#0.425 x 100" AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.

NO. 131846
WORK ORDER
SUBJECT TO AMENDMENT
WITHOUT NOTICE
CONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY

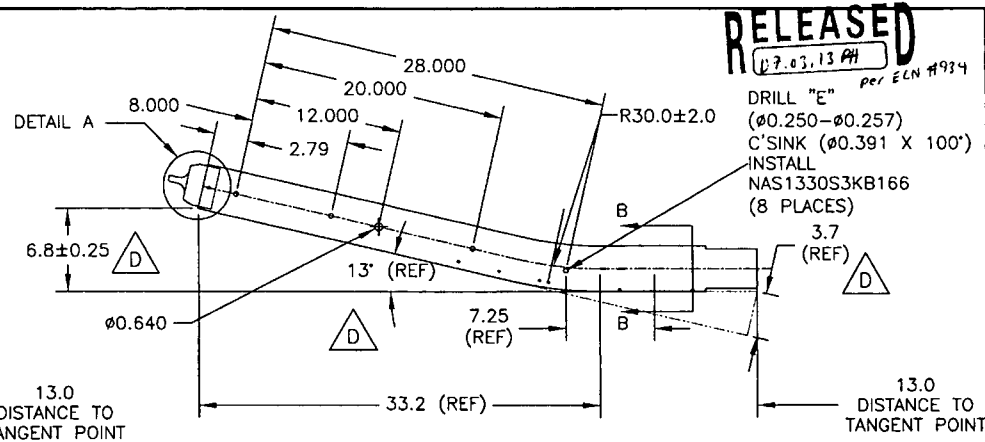
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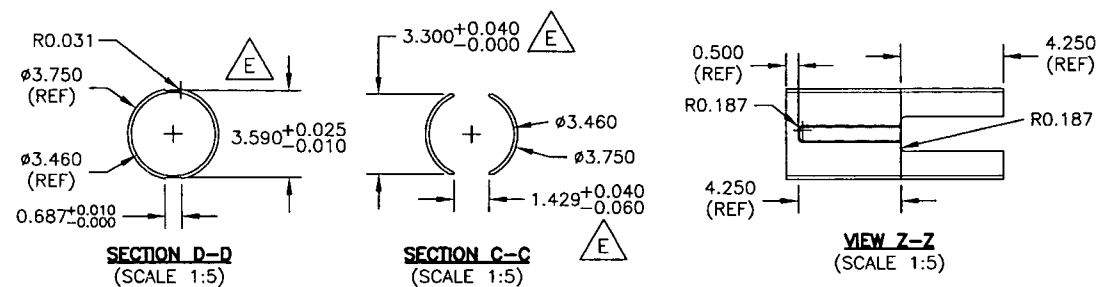
F	07.01.18	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021
E	06.04.25	CHANGE TOLERANCE, EASE MANUFACTURE
D	06.01.23	UPDATE TOLERANCE, CHANGE HOLE SIZE
C	05.09.27	LENGTHEN AFT EXTENSION
B	05.06.10	DRAWING UPDATES
A	05.02.07	NEW ISSUE
DESIGN	DRAWN BY	DART DART AEROSPACE USA, INC. FORT WADSWORTH, WA
CHECKED	APPROVED	DRAWING NO. D3391
DATE		TITLE 412 FLOAT SKITUBE
07.01.18		SCALE NTS

07.03.13 AH
REC ELN 1934

DRILL "E"
(Ø0.250-Ø0.257)
C'SINK (Ø0.391 X 100°
INSTALL
NAS1330S3KB166
(8 PLACES)




D3391-021 ASSEMBLY AND BENDING DETAIL

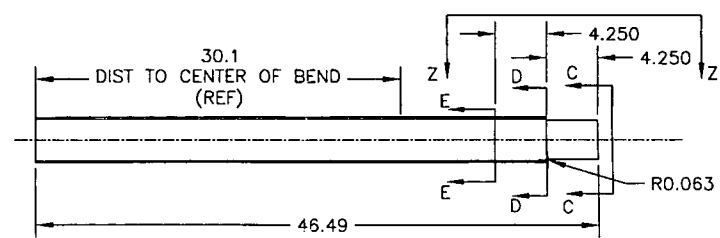


VIEW Z-Z
(SCALE 1:5)




D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST


 DRILL "E"
 (Ø0.250-Ø0.257)
 C'SINK (Ø0.391 X 100°)
 INSTALL
 NAS1330S3KB166
 (12 PLACES)

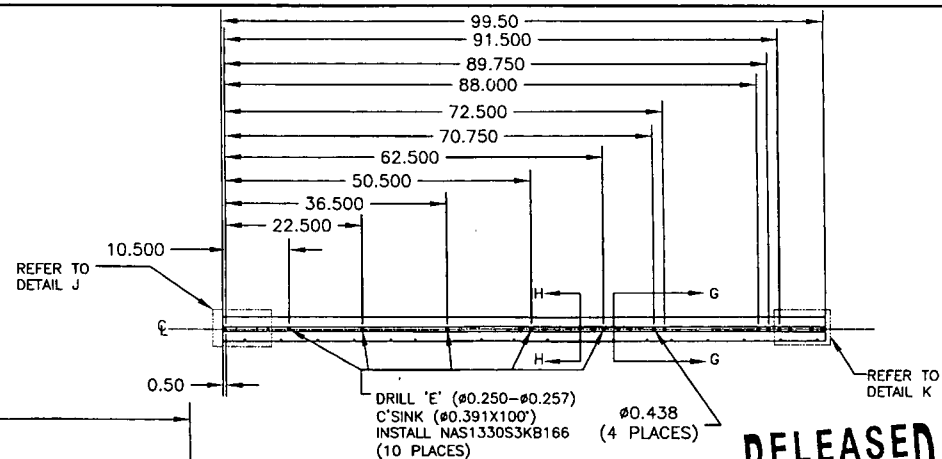
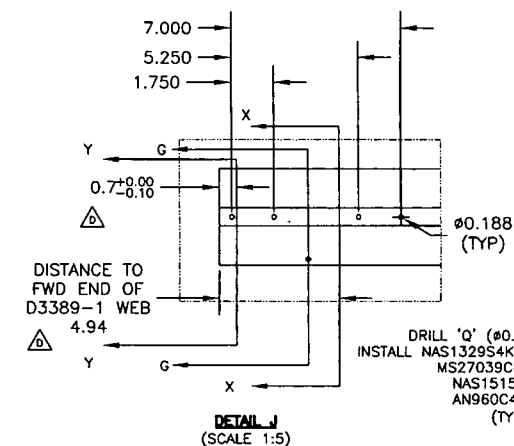
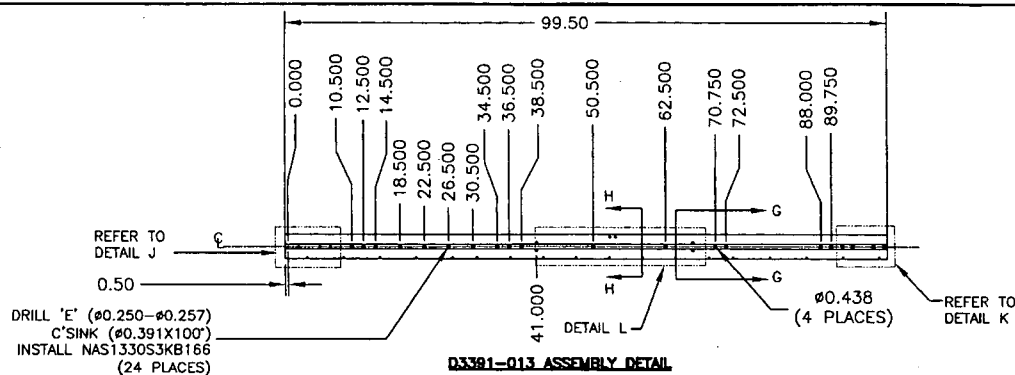
SECTION B-B
(SCALE 1:5)



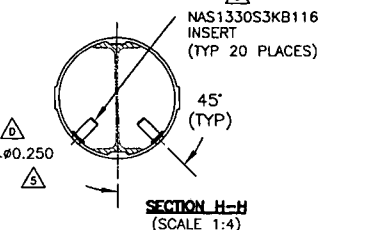
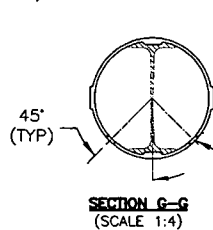
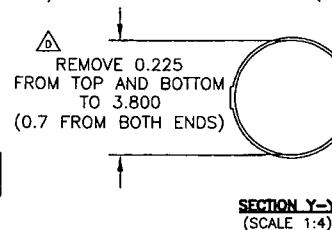
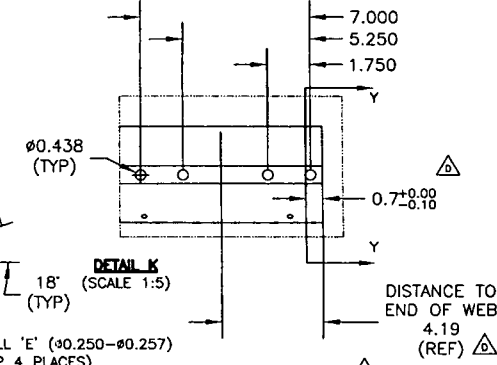
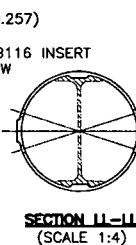
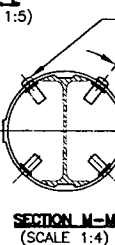
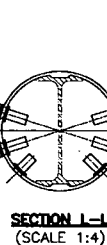
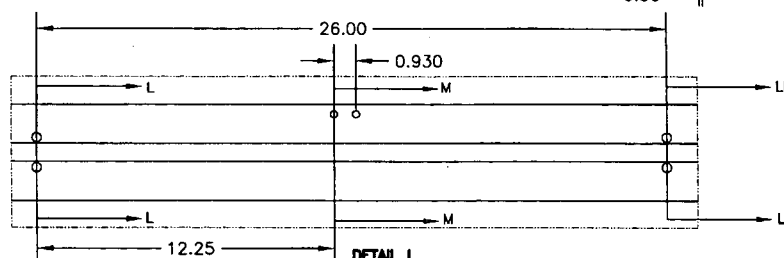
D3391-1 DRILLING AND CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

DESIGN	DRAWN BY	 DART AEROSPACE USA, INC. PORT HADLOCK, WA	
PH 	PH 	DRAWING NO.	REV. F
CHECKED	APPROVED	D3391	SHEET 2 OF 5
DATE	TITLE		SCALE
07.01.18	412 FLOAT SKIDTUBE		1:10

UNCONTROLLED COPY
SUBJECT TO AN ENDAMENT
WITHOUT NOTICE
WORK ORDER
NO. 31346



D3391-023 ASSEMBLY DETAIL



D3391-013/-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 013	QTY - 023	PART NUMBER	DESCRIPTION
X	X	D3391-013	MID TUBE ASSEMBLY
		D3391-023	MID TUBE ASSEMBLY
1	1	D2500-1-100	EXTRUSION
1	1	D3389-1	WEB
24	20	NAS1330S3KB116	INSERT (OR NAS1330C3KB116)
24	10	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)
4		NAS1329S4KB140	INSERT (OR NAS1329C3KB140)
4		NAS1515H3L	WASHER
4		AN960C10L	WASHER
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
4		MS27039C1-09	SCREW
4		MS27039C4-08	SCREW

D3391-013/-023 MID TUBE ASSEMBLY

- MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015

NO. 31842
WORK ORDER
UNCONTROLLED COPY
ENGINEERING
SUBJECT TO AMENDMENT
WITHOUT NOTICE

SECTION X-X (SCALE 1:2)

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DRAWN BY: RH
APPROVED: H

DATE: 07.01.18

DART DART AEROSPACE USA, INC.
PORT WADSWORTH, OH

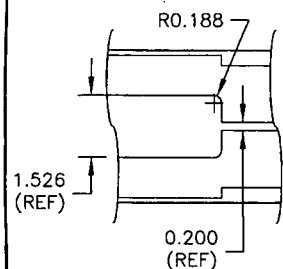
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TITLE: 412 FLOAT SKIDTUBE

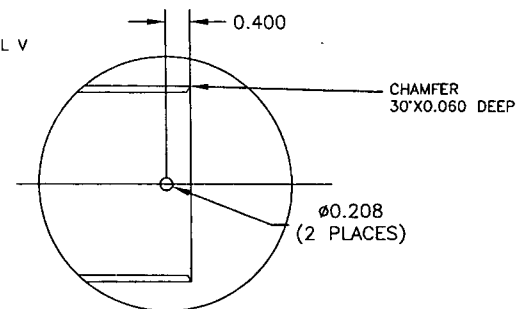
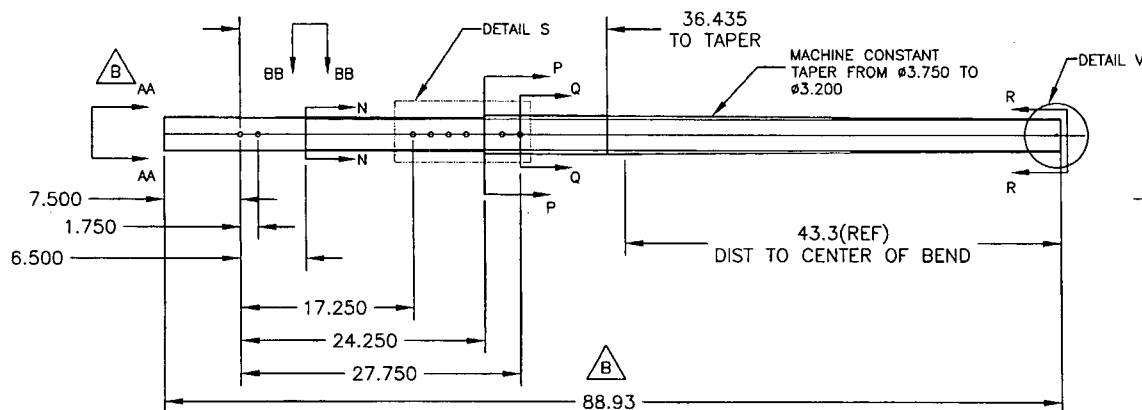
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REV. F
SHEET 3 OF 5

RELEASED
07.05.13 RH
PER ELM #934

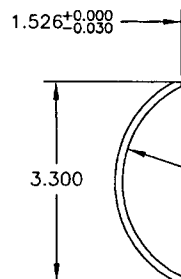


VIEW BB-BB
(SCALE 1:3)

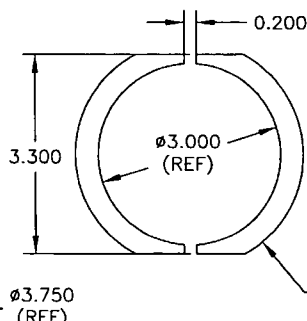


DETAIL V
(SCALE 1:2)

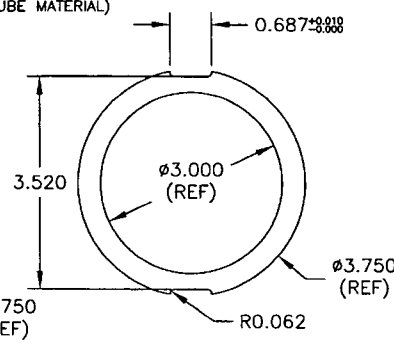
D3391-3 AFT DRILLING AND CUTTING DETAIL
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



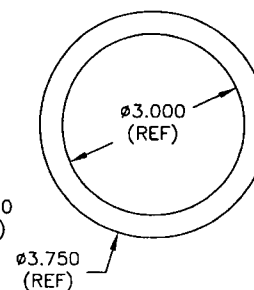
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(SCALE 1:2)



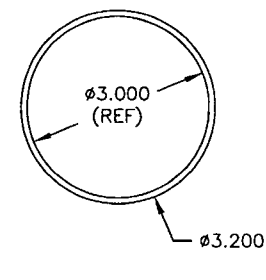
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(SCALE 1:2)



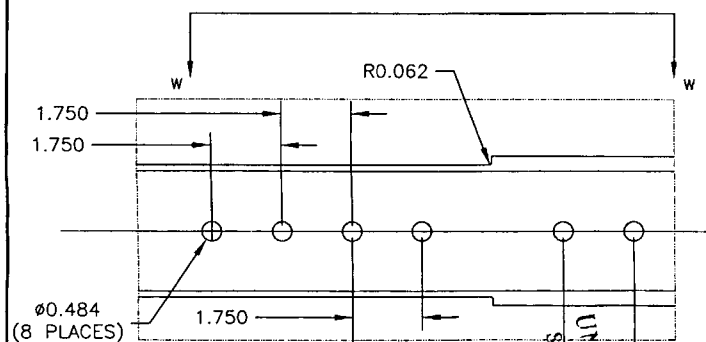
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(SCALE 1:2)



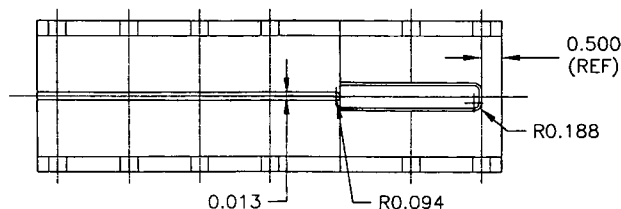
SECTION Q-Q
(SCALE 1:2)



SECTION R-R
(SCALE 1:2)



DETAIL S
(SCALE 1:3)



VIEW W-W
(SCALE 1:3)

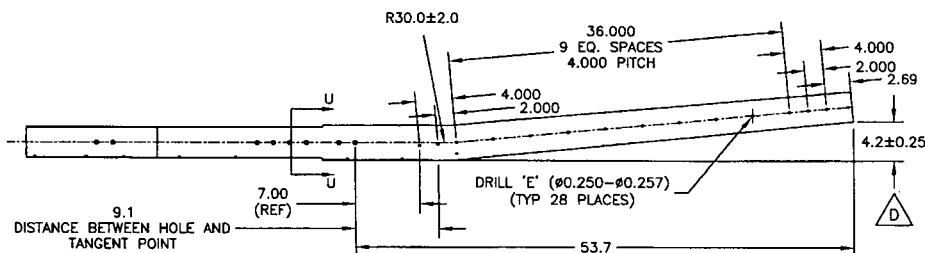
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ENGINEERING
RETURN TO
SHOP COPY
WORK ORDER
NO. 51846
SUBJECT TO AMENDMENT
WITH OUT NOTICE

RELEASED
07-03-13 PH
per SEN #934

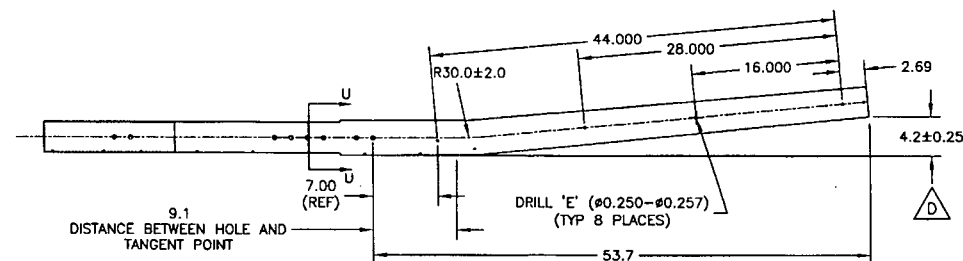
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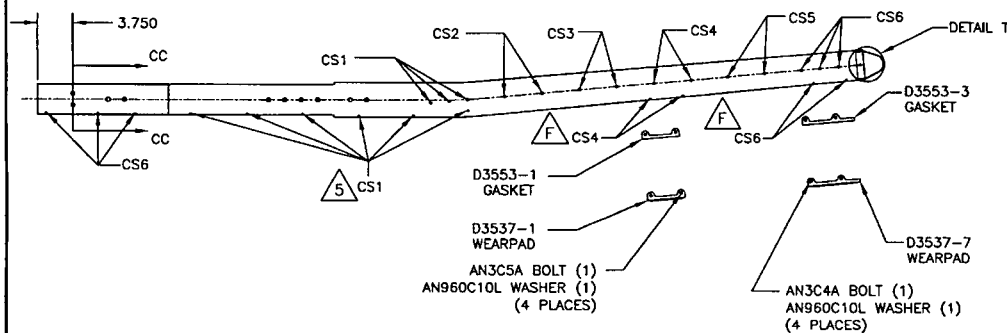
DESIGN PH	DRAWN BY PH	DART DART AEROSPACE USA, INC. PORT HADLOCK, MA	REV. F
CHECKED #	APPROVED #	DRAWING NO. D3391	SHEET 4 OF 5
DATE 07.01.18	TITLE 412 FLOAT SKIDTUBE	SCALE 1:12	



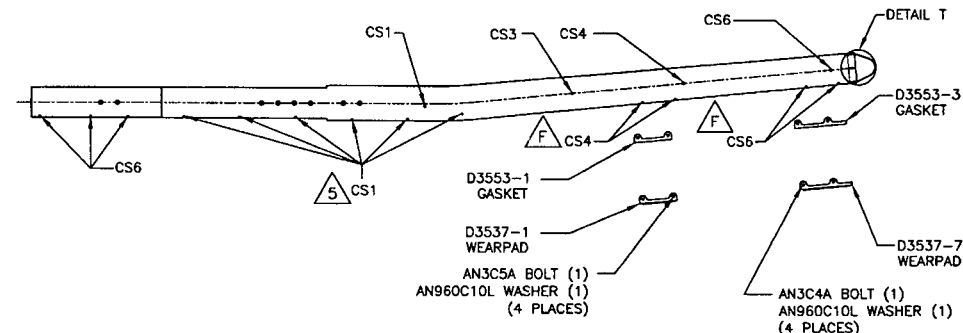
D3391-015 BENDING AND ASSEMBLY DETAIL



D3391-025 BENDING AND ASSEMBLY DETAIL



D3391-015 INSERT AND WEARPAD INSTALLATION DETAIL
(SEE TABLE)



D3391-025 INSERT AND WEARPAD INSTALLATION DETAIL
(SEE TABLE)

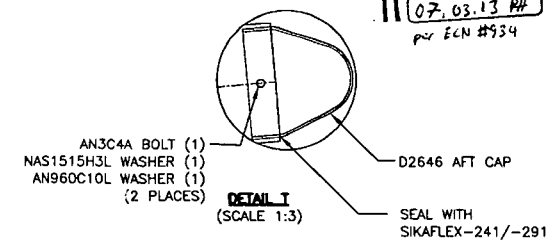
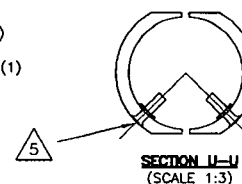
D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
18	14	NAS1330S3KB366	INSERT (OR AES10KB366)
4	2	NAS1330S3KB316	INSERT (OR NAS1330C3KB316)
8	6	NAS1330S3KB266	INSERT (OR NAS1330C3KB266)
4	2	NAS1330S3KB216	INSERT (OR NAS1330C3KB216)
16	12	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)
4	2	NAS1330S4KB151	INSERT (OR NAS1330C4KB151)
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
2	2	NAS1515H3L	WASHER
10	10	AN960C10L	WASHER

C'SINK AND INSTALL NAS1330S3KBXXX IN HOLES MARKED CS1-CS6 AS FOLLOWS

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'SINK	P/N
CS1	18	14	Ø0.425	NAS1330S3KB366
CS2	4		Ø0.391	NAS1330S3KB366
CS3	4	2	Ø0.391	NAS1330S3KB316
CS4	8	6	Ø0.391	NAS1330S3KB266
CS5	4		Ø0.391	NAS1330S3KB216
CS6	16	12	Ø0.391	NAS1330S3KB166

DRILL 'Q' (Ø0.332-Ø0.338)
C'SINK (Ø0.529X100")
NAS1330S4KB151 INSERT (1)
(4 PLACES)



RELEASED
07.03.13 RH
per ECU #934

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DESIGN RH	DRAWN BY BL	DART DART AEROSPACE USA, INC. FORT WORTH, TX
CHECKED H	APPROVED H	DRAWING NO. D3391
DATE 07.01.18	TITLE 412 FLOAT SKIDTUBE	REV. F SHEET 5 OF 5 SCALE 1:12